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**Fisher**

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(54) **NARROWBAND SIGNAL PROCESSOR**

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(58) Field of Search ..... **702/73, 76, 189, 702/190, 191, 194, 196; 341/50; 333/32; 379/398; 704/208, 251, 207; 375/142**

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(57) **ABSTRACT**

A method to process narrowband signals includes dividing the signal into segments of length N, where N optimizes filter bandwidth, FFT size, processing and memory. Each N-length segment is processed sequentially by filtering, a FFT and a peak detector that identifies the N-length segment's K largest spectral components. The frequency, bandwidth and power for the K largest spectral components are stored sequentially as N-processed data. After processing multiple N-length segments, reconstructing individual frequency spectrums for J continuous segments of the N-processed data, mapping the J reconstructed spectrums to a single spectrum, and applying the peak detector to the composite spectrum to separately store the single spectrum's K largest frequencies, with powers and bandwidths, as (N×J)-processed data. The N-length data is processed in groups of J until all N-length data is reprocessed. J may have multiple values, generating multiple processed data sets.

**11 Claims, 3 Drawing Sheets**

